APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,649	12/31/2001	Robert D. Cavin	42390.P13455	9235

7590 04/21/2005	**EXAMINER**
Peter Lam	LAMARRE, GUY J
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP	

ART UNIT	PAPER NUMBER
2133	

Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/039,649	CAVIN, ROBERT D.
	Examiner	Art Unit	
	Guy J. Lamarre, P.E.	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _11/22/04_ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _17-22 and 26-44_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _17-22 and 26-44_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _31 December 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) ☐ Other: _____ .

U.S. Patent and Trademark Office
PTO-326 (Rev. 04-01)   Office Action Summary   Part of Paper No.

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection.   Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, <u>the finality of the previous Office action has been withdrawn pursuant to</u>

<u>37 CFR 1.114</u>. Applicant's submission filed on <u>11/22/</u>2004 has been entered.

1.   This office action is in response to Applicants' **submission** of <u>11/22/</u>2004.

1.1   **Claim 44 is** amended. **Claims 17-22 and 26-44** remain pending.

1.2   The objections and rejections of record are withdrawn in response to Applicants'

amendment.

Response to Arguments

2.0   Applicants' arguments of 11/22/2004 have been fully considered, they are found

persuasive only to the extent that varying data transmission rate means responsive to error

conditions is not specifically described by the prior art of record. **Mayor et al.** (US Patent No.

6,859,463; filed Nov. 8, 1999) teaches such schemes, e.g., in Figs. 6a-b, as follows.

Claim Rejections - 35 USC ' 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section
102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the
subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary
skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the
invention was made.

3.1   **Claims 17-22 and 26-44** are rejected under 35 U.S.C. 103 (a) as being obvious over
HAARTSSEN ET AL. (WO 01 99384) and **Mayor et al.** (US Patent No. 6,859,463).

As per Claims 17-22 and 26-44, HAARTSSEN substantially discloses a data processing

system, e.g., ad hoc or wireless network or Bluetouth ™ (page 1 last para.) or 802.11 (b) device

that dynamically selects packet type, such as packet lengths, or error encoding procedures, based

on channel conditions or characteristics, such as packet error rate (PER) in Tables 1-2. Fig. 5

depicts hardware implementation thereof wherein channel conditions are evaluated and selection

is made based on comparison of said channel condition evaluation and some preset threshold.

Noise abatement means, such as interference avoidance (e.g., FHSS or non-FHSS) and

suppression (e.g., DSSS), are described, e.g., on page 2 para. 3 - page 3 para. 2; means to

optimize data communications efficiency by making a nexus between throughput efficiencies

with channel conditions, e.g., at page 18 paras. 1-2. Specific properties of packets are selected by

varying encoding schemes, data packet lengths, or modulation; means comprising: receiving

(numeral 56) a data packet through a wireless channel; evaluating (numeral 52) quality of said

wireless channel; calculating a packet error ratio (PER) value for said data packet; checking

whether said PER value (numeral 52) is within an acceptable level; and determining whether an

intermittent noise is affecting said PER value on page 2 para. 3 - page 3 para. 2.

FIG. 5
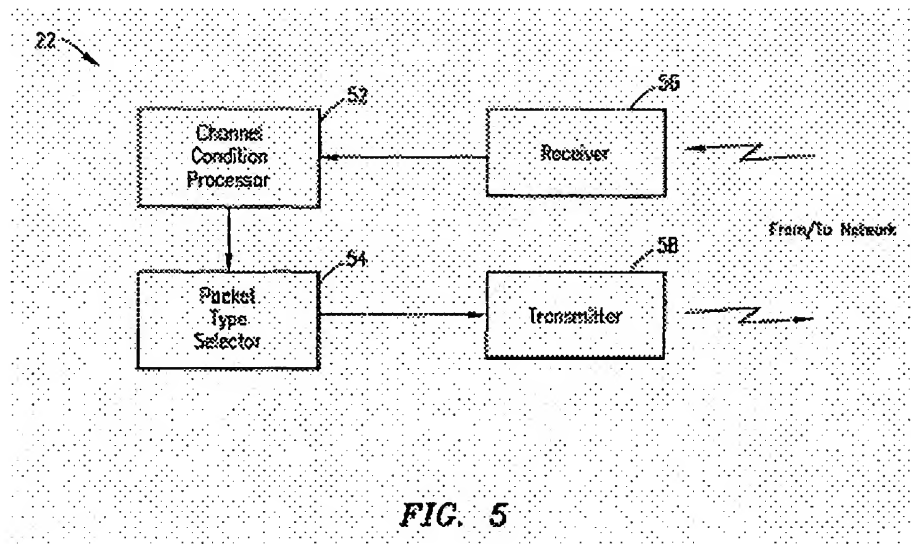
HAARTSSEN discloses the claimed means further comprising determining whether said

intermittent noise is due to a frequency hopping spread spectrum (FHSS) wireless device on page

2 para. 3 - page 3 para. 2; means wherein said data packet is wirelessly transmitted from a first

wireless device to a second wireless device at a bit rate, said first and second wireless devices

both compatible to a common wireless protocol on page 2 para. 3 - page 3 para. 2; means further

comprising stepping up said bit rate at which said data packet is transmitted if said PER value is

less than a raise rate threshold on page 2 para. 3 - page 3 para. 2; means further comprising

stepping down said bit rate at which said data packet is transmitted if said PER value is greater

than a drop rate threshold on page 2 para. 3 - page 3 para. 2;means further comprising stepping

down said bit rate if said intermittent noise is caused by a non-FHSS or constant interference

source on page 2 para. 3 - page 3 para. 2; means further comprising propagating against said data

rate to said second wireless device in Fig.5; means wherein said FHSS wireless device is a

Bluetooth device in para. 1 of page 14; means wherein said data packet is received at an 802.11

(b) device in para. 1 of page 14; means comprising: evaluating (numeral 52) a data packet for

any error; checking whether said data packet includes a packet error; calculating (numeral 52) a

packet error ratio (PER) for said data packet; and raising data rate setting at which subsequent

data packet are transmitted if no packet error exists and said PER is less than a raise rate

threshold in Tables 1-2 wherein means are provided for adjusting plural packet characteristics

based on channel conditions; means further comprising backing off said data rate if an error

exists and said PER value is greater than a drop rate threshold in Tables 1-2 wherein means are

provided for adjusting plural packet characteristics based on channel conditions; means further

comprising stepping down said data rate if an intermittent noise from a non-FHSS or constant

interference source causes a packet error in Tables 1-2 wherein means are provided for adjusting

plural packet characteristics based on channel conditions.

HAARTSSEN discloses the claimed means further comprising: generating a signal

strength value and saving said value in a memory location; and evaluating a value for said data

packet, wherein said data rate is increased if an average signal strength value based on prior data

packets is above a signal strength raise rate threshold in Tables 1-2 wherein means are provided for adjusting plural packet characteristics based on channel conditions.

HAARTSSEN discloses the claimed means comprising determining whether said packet error is due to intermittent interference on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means wherein said intermittent interference is caused from a frequency hopping spread spectrum (FHSS) device on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means further comprising stepping down said data rate if said interference is not caused by said FHSS device on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means comprising: a wireless transceiver (Fig. 5: numeral 56) to send and receive (Fig. 5: numeral 56) a data packet via wireless communications; a network interface card coupled to said wireless transceiver, said network interface card to connect to another wireless device to form a wireless local area network; and firmware comprising control logic to calculate (Fig. 5: numeral 52) a packet error ratio (PER) value for said data packet, check (Fig. 5: numeral 52) whether said PER value is within an acceptable level, determine whether an intermittent noise is affecting said PER value, step up data transfer rate at which said data packet is transmitted if said PER value is less than a raise rate threshold in Tables 1-2 wherein means are provided for adjusting plural packet characteristics based on channel conditions and said intermittent noise is due to a frequency hopping spread spectrum (FHSS) device on page 2 para. 3 - page 3 para. 2.

HAARTSSEN discloses the claimed means wherein said control logic is to further determine whether said intermittent noise is due to said FHSS wireless device on page 2 para. 3 - page 3 para. 2; means wherein said FHSS wireless device is a Bluetooth device in para. 1 of page 14; means wherein said apparatus is an 802.11 (b) protocol compatible wireless device in para. 1

of page 14;means wherein said control logic is to further step down said bit rate at which said

data packet is transmitted if said PER value is greater than a drop rate threshold in Tables 1-2

wherein means are provided for adjusting plural packet characteristics based on channel

conditions.; means wherein said control logic is to further step down said bit rate if said

intermittent noise is caused by a non-FHSS source in Tables 1-2 wherein means are provided for

adjusting plural packet characteristics based on channel conditions.

Not specifically described in detail by **HAARTSSEN** is the step of varying data

transmission rate means responsive to error conditions.

However Mayor, in an analogous art, discloses a DSSS data processing system wherein

plural transmission parameters, comprising data transfer rate adjusting means, are optimize to

maximize robustness against intermittent or periodic channel interference in a communication

system. {See **Mayor et al.,** Id., Figs. 6a-b, 8 and related description wherein data transfer

parameters comprising data rate/type, packet length, signal bandwidth, FEC scheme are

adaptively varied based on current channel intermittent interference or noisy conditions to

optimize radio frequency resources required for signal transmission.}
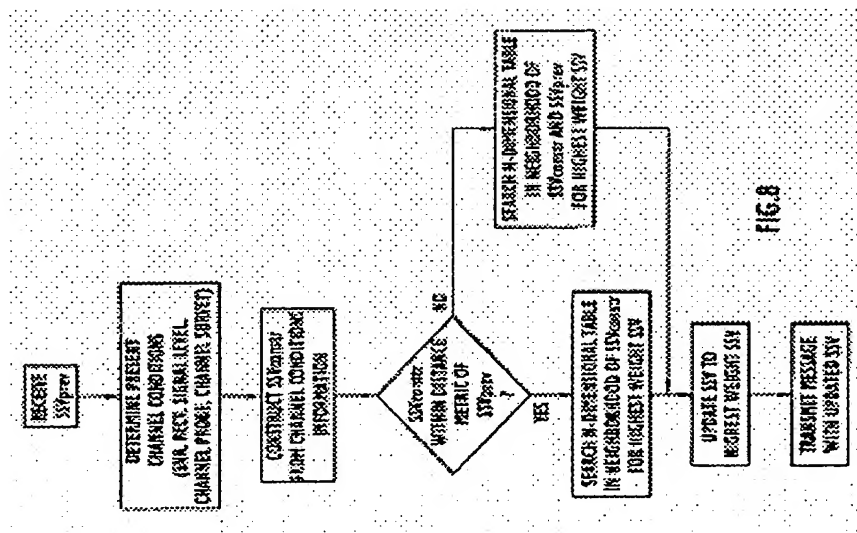
Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the procedure of **HAARTSSEN** by including therein data transfer parameter adjustment means as taught by **Mayor et al.,** because such modification would provide the procedure of **HAARTSSEN** with a method whereby radio frequency resources required for signal transmission are optimized by varying transfer parameter via transmission data rate adjustments. {See **Mayor et al.,** Id., Figs. 6a-b.}

As per Claims 34-36, Mayor et al. discloses means to dynamically adjust transfer rate (increasing or decreasing transfer rate) based on intermittent channel interference in Abstract and Figs. 6a-b, 8., e.g., **Mayor et al.** '*presents a structured, coordinated approach for selecting sets of operational parameters resulting in efficient and reliable message exchanges between network nodes. Concepts derived from general system theory are applied to organize, control and optimize the specific parameters of a communication system and its subsystems. More particularly, a System State Vector (SSV) is constructed from the set of communications parameters used to transmit each message. Thus, for example, the System State Vector may specify the data rate, the packet length, the signal bandwidth, the frequency channel, the code channel, the transmit signal power, the multipath profile and the forward error correction scheme used to transmit a message from one node to another node...*

Based on channel characteristics the destination node observes from the RTS message and from pre-stored information about the relative performance of different combinations of parameters (different SSV values), the destination node applies the System State Transformation to SSV.sub.0 to obtain an updated system state vector SSV.sub.1. The destination node then transmits the CTS back to the source node using the parameters of SSV.sub.1..'

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

4.0   Any response to this action should be mailed to:

Commissioner of Patents and Trademarks, Washington, D.C. 20231

or faxed to: (703) 872-9306 for all formal communications.

Hand-delivered responses should be brought to Customer Services, 220 20th Street S., Crystal Plaza II, Lobby, Room 1B03, Arlington, VA 22202.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy J. Lamarre, P.E., whose telephone number is (571) 272-3826. The examiner can normally be reached on Monday to Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert De Cady, can be reached at (571) 272-3819.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-3609.

Information regarding the status of an application may also be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Guy J. Lamarre, P.E
Primary Examiner
4/18/05